DAIRYLAND POWER COOPERATIVE • 3200 EAST AVE. SO. • P.O. BOX 817 • LA CROSSE, WISCONSIN 54602-0817
OFFICE: (608) 788-4000
WEB SITE: www.dairynet.com

October 15, 2001

Mr. Jon Heinrich
Department of Natural Resources
Bureau of Air Management
P. O. Box 7921
Madison, WI 53707

Dear Mr. Heinrich:

SUBJECT: Department of Natural Resources Proposed Revisions to Wis. Admin. Code Relating to the Control of the Atmospheric Deposition of Mercury — AM-27-01

The following are comments from Dairyland Power Cooperative (DPC) in opposition to the Department to Natural Resources proposed administrative rules (NR 446 Control of Mercury Emissions) relating to the control for mercury emissions to address the atmospheric deposition of mercury.

On Wednesday, October 10, 2001, in a telecommunication with the Department's Mr. Tom Karman, we were notified that the Department was granting a request received from a stakeholder for a two-week extension to the October 15, 2001 comment period deadline. On the morning of October 15, 2001, we were informed by Department staff that a formal two-week extension to the October 15, 2001 date had actually not been granted and that comments were still due on October 15, 2001, although provisions were being made to accept "supplemental" comments for another two week period.

Following this new guidance from Department staff, we are submitting the comments herewith that we have developed to date. Also, following this new guidance, by this letter, we inform the Department of our intentions to provide additional supplemental comments by October 30, 2001.

I. INTRODUCTION

Dairyland Power Cooperative (Dairyland) and our member distribution electric cooperatives and their members, are on record with an annual meeting Resolution supporting a reasonable, responsible and balanced approach to address mercury as a global pollutant. As a demonstration of our commitment, Dairyland joined with other Wisconsin Utilities in proposing to the Wisconsin Department of Natural Resources (WDNR) a mercury reduction program that would achieve a 10% reduction in five years and a 40% reduction in ten years. In addition, the stewardship that our Cooperative has shown through the efforts of our internal pollution prevention program to reduce the use of mercury within our business system is another example of our leadership on reducing mercury in the environment. We have been involved and engaged with WDNR technical staff in forums on this issue. However, even though we agree with WDNR that mercury in the global environment is an issue of concern, **we find it necessary to firmly go on record in opposition to the mercury emission reduction rule that is proposed in Order AM-27-01**.

II. GENERAL COMMENTS

The Natural Resources Board directed WDNR to promulgate mercury rules that meet certain criteria, including that the rules protect public health and the environment, be cost-effective, reasonable, and not interfere with the ability of electric utilities to supply the state's energy needs. The mercury reduction rule that is proposed in Order AM-27-01 does not conform to the criteria laid out by the NR Board.

The Public Service Commission of Wisconsin (PSCW or Commission) opened an investigation (Docket No. 05-EI-130) of the potential impact on the state's generation supply portfolio due to the mercury emissions rule that WDNR has proposed. Dairyland Power Cooperative submitted extensive comments to the PSCW detailing our concerns as to the potential impacts on the reliability, fuel mix, and cost of the state's existing and planned generation portfolio as a result of the mercury emissions rules proposed by WDNR. The comments that we prepared and submitted in the PSCW investigation are relevant in the Department's public hearing process on the proposed NR 446 rule and, as such, we have attached as Appendix A our letter to the Commission dated August 24, 2001.

We believe the citizens of Wisconsin would be better served if the WDNR staff applied its energy and knowledge on the mercury issue to working with the staff at the EPA that is currently in the process of developing rules for mercury emission sources. If the Department feels that a Wisconsin-only rule is necessary, it should take the form of a "bridge" to the forthcoming federal rule and should limit mercury emission reductions from utility sources to the 10% reduction in five years and 40% reduction in ten years consistent with the proposal that was offered by Dairyland and other Wisconsin utilities.

III. SPECIFIC COMMENTS ON PROPOSED NR 446

A. Baseline Determination - NR 446.03

We do not agree with the proposal that the mercury emission baseline be the average of annual emissions for 1998, 1999, and 2000. The Natural Resources Board Resolution directed staff to incorporate into the rule "a methodology for determining baseline emissions levels," however, there was no specification that it must be a "historical" baseline. **It is our position that for combustion units, the "baseline" should be the current year, mercury in coal, input to the boiler.** We refer to this as the "current year baseline." The concept of current year baseline can also be constructed to be applicable to process units where process raw material feedstocks, process streams, and products/by-products are the focus.

We have grave concerns as to the equitableness of an annual average baseline calculated from annual emissions for the years 1998, 1999, and 2000. During about half of the time period that WDNR proposes for baseline setting, a perturbation in the coal markets resulted in Dairyland purchasing a considerable quantity of a very low mercury coal to make up part of the blended fuel that is burned in our Genoa 3 and Alma 1-5 boilers. This means that crafting a baseline for our Dairyland system using the baseline setting time period that is proposed would result in an atypically low mercury emission baseline. Compounding the problem is that while the coal was low in mercury, it had other fuel quality characteristics that resulted in unfavorable performance placing it very low on our candidate fuels qualification list. The result of this situation is that any level of reductions from this "artificially" low mercury emission baseline would actually require Dairyland to make much higher percent reduction because typical coals delivered have a higher mercury content.

The "historical" baseline setting method that WDNR proposes is so problematic that WDNR's rule proposal allocates a 24-month period for the regulated stationary sources to try to figure out what their mercury emissions might have been back in 1998, 1999, and 2000, and then report it to WDNR. Then, faced with the unenviable task of working through the reports and making decisions as to who got it right, who got it wrong, and what to do about it, the rule proposal allots another 12 months for WDNR staff to sort it out. This endeavor is not a good use of staff time.

The WDNR's rule proposal requires the submittal of a report that " . . . includes information to calculate the annual mercury emissions for 1998, 1999, and 2000 using the procedures in s. NR 446.04." (Our specific comments on the proposed procedures for determining baseline mercury emissions are detailed in our comments on proposed NR 446.04 below.) We are concerned that "information" that WDNR thinks the regulated sources have available for submittal, may not be available, e.g., fuel samples, fuel sample analysis, quantities of fuel burned during the baseline period. We are equally concerned about the availability of accurate information pertaining to what might have been the mercury removal efficiency of pollution control equipment in some years that are now past. Determining - - - or maybe it is

more accurate to refer to it as fabricating - - - retrospectively, a mercury emission baseline for 1998, 1999, and 2000 is rife with problems.

A "current year" baseline would also eliminate the special regulatory code proposed to address "newly affected stationary sources." It would also eliminate the three-year delay in determining a baseline for new sources as is currently proposed. Baseline setting would be the same for both existing and new sources under the "current year" baseline setting concept.

We urge the WDNR to accept our proposal that a mercury emission baseline be established as a "current year" baseline. This method of baseline setting is technically defensible versus fabricating a retrospective, or historical, baseline where necessary accurate information likely doesn't exist. At the very least, a better "historical" baseline would be one that is created over a three-year period after any rule is finalized. This method would result in a much more representative baseline determination, as the regulated sources would have the opportunity to acquire accurate information following codified rule procedures.

B. Procedures for Determining Baseline Mercury Emissions - NR 446.04

The procedures that the WDNR proposes for determining baseline mercury emissions for major utility combustion units are unreasonable, unworkable, and technically flawed. The rule proposes that regulated sources calculate and report to the department the mass mercury content of each fuel used in each emissions unit during the baseline years. The Wisconsin Administrative Code, in Chapter NR 400, defines "fuel" as meaning natural gas, petroleum, coal or any form of solid, liquid, or gaseous fuel derived from such material. However, Department staff indicated during Technical Advisory Group (TAG) meeting discussions on the issue of baseline, that in cases where sources burned different coals with considerably different mercury content, it would be required that the mercury content of each coal type by determined rather than each "fuel" type. It is from this understanding that we offer the following comments as they pertain to the issue of determining the mercury content of fuel.

While we find staff's interpretation regarding fuel mercury sampling most objectionable from an implementation standpoint, considering that some Dairyland boilers burn "blended" coal and where the mercury content from coal type to coal type can vary at least as much as 35%, we would tend to agree that to develop a reasonably accurate baseline, it likely would necessitate sampling an analyzing each coal type. Nonetheless, we simply do not have available all the information that is required to do the calculation of baseline mercury emissions following the WDNR's proposed procedures.

We have the following three significant problems with the requirements that the WDNR has proposed in this section of the rule:

1) The rule proposes that regulated sources are required to report the annual consumption of fuel used in each unit during the baseline years. We do not have accurate information as to the "annual consumption of each fuel used" during the proposed baseline period.
2) We do not believe that either of the WDNR's proposed alternatives for the source of fuel characteristic information are reasonable. In our own case, both are unworkable.

3) The rule proposes that, after the rule is final, regulated sources will be required to conduct, for each fuel, performance tests on air pollution control equipment. The proposal goes on to require that regulated sources use this information as representative of what the mercury removal efficiency of the pollution control equipment was during the baseline setting period - - -1998, 1999, and 2000 - - - some four or five, or more years prior. We believe this proposed requirement is completely unreasonable and without any technical basis. We describe in further detail below are issues and concerns with these proposed rule requirments.

1. The "past analysis" method. (NR 446.04(1)(b)2.a.)

It certainly can't be reasonable that the WDNR expects that regulated sources would have certain past actual analytical information, some of which was not required to satisfy any internal need or to satisfy any regulatory requirement, on all coals burned during the proposed historical baseline years. How could Dairyland, or any other regulated source, have known beforehand that the WDNR would later require that we report this information? I doubt whether any source will be able to fully comply with this method.

We have the same concern regarding the WDNR's expectation that we report the annual consumption of each fuel used. (NR 406.04(1)(b)1.) How could we have known, in advance, that the WDNR would later require the reporting of annual consumption data for each coal; a reporting requirement that could only be satisfied by physically segregating each type of coal received? Does the WDNR have any concept of how much land area would be necessary to provide for segregated coal storage piles at a facility that may receive total shipments of 500,000 to 750,000 tons of coal per year comprised by possibly six or seven different types of coal?

I would like to explain further why this is may be more of an issue for some sources. At some facilities that receive coal by river barge, like Dairyland's Genoa 3 and Alma 1-5 generating stations, coal shipments are annually interrupted for four to five months due to the closure of the river navigation for the winter season. With the truncated shipping season, it is necessary to stockpile enough coal to carry over the supply to the next delivery season. By the very nature of the stockpile process, there is to some extent a "first in-last out" element to the process. This effect is likely exacerbated at facilities that only receive coal shipments over seven to eight months of the year. At our facilities receiving coal by river barge, we do stockpile coal into separate piles. However, it is only two piles - a high BTU pile and a low BTU pile. The coal burned in the boilers at these facilities is usually blended to meet a certain target BTU blend. That blend ratio changes for a number of reasons, but most often in response to market demand for electricity. All of these factors working together can result in the situation where a particular coal received in one year could be in the inventory for several years before it is consumed.

In summary, since we couldn't have known in advance that the WDNR would require reporting of certain fuel characteristics data for each fuel consumed, as well as the amount of each fuel consumed on an annual basis, for years (1998, 1999, and 2000) that are now past, we will be unable to report by the

"past analysis method" all the information that proposed NR 446.04 requires. It is way beyond reason to think that any source would have all this information available to report, particularly mercury and chlorine analysis, for each fuel used.

2. The "current analysis of a fuel determined to be representative" method. (NR 446.04(1)(b)2.b.)

We have serious concerns regarding the feasibility, as well as the technical merits of the WDNR's proposal for an alternative source of data for making the baseline determination in cases where actual past analytical data is not available. For these situations, the WDNR rule proposes that the source report fuel characteristics and, ultimately, a calculated mercury emission baseline, from "[a] current analysis of a fuel determined to be representative of a specific fuel used during baseline years." For the same reasons identified in our comments above, this is impossible to comply with if a source doesn't know what specific fuel, or fuels, were consumed in each year during the proposed baseline setting period; a situation not unlikely for a large coal burning facility burning multiple types of coal. Even if such facility did know what type of fuels were burned, there may still be the issue of not knowing with any accuracy the quantity of each fuel consumed in each year during the baseline setting period.

We also have concerns regarding the technical merits of this proposed method. It is important to keep in mind that this baseline setting process may occur possibly four or five, or even more years after the beginning of the proposed baseline period. Even if a source were to know each and every fuel burned during the proposed baseline period and the quantity of each, how is it possible for a source to make a determination that a "current analysis of a fuel" is "representative of a specific fuel" used during the baseline period? What set of criteria would a regulated source employ to make this determination? What set of criteria would the WDNR staff use? Even if there were some procedure and valid criteria in which to make such a determination, it is doubtful that a current sample of an actively-mined coal seam is representative of coal mined from that seam as much as five or six years prior. Within an actively-mined coal seam, the location of coal produced today may be separated by miles from the point of origin of coal produced just a few years earlier. We know from fuel characteristics data reported from mining company core samples of coal fields, USGS coal field sample analysis data, and from EPA's mercury in coal Information Collection Request (ICR) that there considerable variability in fuel characteristics of samples within a coal seam. And remember the EPA's ICR was data collected over only a one-year period.

3. Retrospective determination of control device efficiency. (NR 446.04(1)(c)3.)

The WDNR's rule proposes that, within 24 months after the effective date of the rule, regulated sources are to conduct a performance test, for each fuel (presumably the fuel or fuels that are currently burned at that point in time), of the mercury removal efficiency of air pollution control equipment. The proposed rule

specifies that not only will this test result be used to represent "current" mercury removal efficiency, it also will be used as representative of the mercury removal efficiency of air pollution control equipment during the baseline period and in calculating mercury emissions during the baseline setting period. It appears to us that in proposing this procedure, the WDNR is making the presumption that: (1) fuel type and characteristics do not influence the mercury removal efficiency of pollution control equipment. (Due to the retrospective nature of the requirement, the testing will be on fuels currently burned, whether or not these fuels are even of the same type as those burned in 1998, 1999, and 2000); (2) the pollution control device is the same, or is in the same operating condition today as it was during the baseline setting period: and, (3) the results of this testing can be used as a surrogate for conditions and performance during the baseline setting period. We couldn't disagree more. There is no technical basis for making these presumptions. The WDNR's proposal in this regard is unreasonable and technically flawed.

In summary, we do not believe that the WDNR has proposed procedures for the determination of baseline mercury emissions for major utility combustion units that are workable. For the reasons identified above, it doesn't appear that we would be able to report the information that the WDNR proposes must be reported for determination of a mercury emissions baseline.

We urge the WDNR to accept our proposal that a mercury emission baseline be established as a "current year", or "coal mercury in", baseline. This concept for a baseline is technically defensible versus fabricating a retrospective, or historical, baseline where necessary accurate information likely doesn't exist.

The following is our conceptualization of how this method would work:

The "current year" baseline would use current mercury in the coal ("coal mercury in") as the baseline from which any reduction requirement would be based. Fuel sample and analysis to determine mercury input to the combustion unit can be conducted at some reasonable frequency that will adequately satisfy expectations for accuracy for baseline determination. Biennial performance testing, the procedure the Department uses now for particulate control equipment, to quantify the mercury removal efficiency of pollution control equipment can be conducted and utilized to establish an emission factor which can be used in the reporting of outlet mercury emissions ("flue gas mercury out.") The "coal mercury in/flue gas mercury out" procedure would use current information developed with state-of- the-art methods to produce data of known accuracy. This is far superior to the "fabrication" method that WDNR has proposed in NR 446.

At the very least, a better "historical" baseline would be one that is created over a three-year period after any rule is finalized. This method would result in a much more representative baseline determination, as the regulated sources would have the opportunity to acquire accurate information following codified rule procedures.

C. Mercury emission offsets - NR 446.05

The WDNR's rule proposal, applicable to stationary sources, requires mercury emissions offsets at a ratio of 1.5 to 1.0 for all new, and modified, sources with annual allowable mercury air emissions greater than ten pounds per year. We are deeply concerned that this provision will eliminate coal as a candidate fuel for any new electric generating units. In all likelihood, this provision is equivalent to a mandate for a natural gas only energy policy for Wisconsin, a prospect that we believe to be very poor energy policy for this state. Our analysis indicates that we will not be able to meet a 90 percent reduction from a historical emissions baseline, let alone be able to accumulate offset credits towards necessary additions of new generating units.

We also have concerns over the applicability of the proposed offset provision to modified sources. We wonder how the WDNR permit writing staff will respond should the retrofit of activated carbon injection for mercury control on an existing coal combustion unit result in an increase in particulate emissions over the threshold level for trigger of the NR codes' modification provisions? Will the source have to obtain mercury offsets because now it is a modified source? This scenario is not all that unlikely considering that one Wisconsin electric utility has encountered this trap when applying for a permit to retrofit Low NOx Burners on a unit to meet the reasonable rate of progress requirements in the ozone SIP.

The emissions offset provision is unreasonable, unworkable, and must be deleted from any form of a Wisconsin-only mercury rule.

D. Mercury reduction requirements for major utilities - NR 446.06

The proposed reduction requirements of 30% in five years, 50% in 10 years, and 90% in fifteen years from a historical baseline are extreme and unreasonable. The reduction requirement of 90% from baseline is so extreme that, other than the option of retirement of coal units and replacement with some other source of electric generation, there is no post-combustion equipment currently available, scaled to utility size boilers, which will ensure compliance.

We also believe there is equitability issue in that the proposal applies the reduction requirement to all affected major utilities regardless of the magnitude of post reduction emission levels. That is, some sources having made 90% reduction from baseline levels would likely have post-control emissions in the range of 15 to 20 pounds, while a 90% reduction applied to the baseline emission level for some other regulated sources will likely result in post-control emissions still exceeding 100 pounds. We think this makes the case that a "MACT-type floor" should be included in the rule. We believe that required reductions should be limited to the major utility applicability threshold of 100 pounds. Once a major utility has reduced emissions to 100 pounds, they would then be subject to a cap at 100 pounds and would not be required to make reductions below that level. Reduction requirements at the 90% level, which would drive emissions to very low levels, are not equitable, or reasonable, and likely cross the accuracy threshold in the ability to quantify what the emissions actual are.

We also don't believe the proposed extreme reductions from a historical baseline are compatible with the expected federal MACT standard that EPA is currently in the process of developing. When Dairyland and the other Wisconsin utilities communicated to WDNR their support for a mercury reduction program that would achieve a 10% reduction in five years and a 40% reduction in ten years, it was with the knowledge that developing mercury control technology would likely make the reduction targets achievable. It also was with the knowledge that these reasonably achievable reduction targets could be met without compromising future compliance options with the expected future mercury MACT standard.

E. Mercury-containing products reduction projects - NR 446.07

We support the Departments stated intention to encourage mercury-containing products reductions projects. However, we think that some of the limits the Department has proposed for this method of removing mercury from public circulation could actually discourage this alternative.

The Department proposes to only certify mercury emission reductions from projects that propose the collection of 50 pounds of mercury or more annually from sources in Wisconsin. When one considers that the rule applicability threshold for major stationary sources is 10 pounds and considering that the proposed 90% reduction requirement for major utilities would result in some utilities required to report post-control compliance of mercury emissions in the range of 10 to 20 pounds, it really appears that the Department intends to count mercury in 1 pound increments. The same standard should apply to certification of process. The alternative of collecting and disposing of mercury, from mercury-containing products, in a manner that will prevent or minimize future release of mercury into the environment is so economical that we believe that WDNR should revise its proposal to certify even a 1 pound reduction from this alternative.

The Department has discussed with stakeholders that mercury reductions from product collection programs would be discounted if, or when, applied against mercury air emission reduction compliance requirements. We strongly believe that any mercury that is collected and disposed of in a manner that minimizes future release to the environment, whether that be from reductions in mercury air emissions from fuel burning or from mercury-containing consumer products, should be certified on an equivalent basis.

F. Pollution reduction projects - NR 446.08

The Department has proposed to only certify mercury emission reductions from pollution reduction projects that result in 5.0 pounds or more annually of mercury emissions reductions. We don't believe that setting such a high limit, 5.0 pound, is reasonable or necessary. When one considers that the rule applicability threshold for major stationary sources is 10 pounds and considering that the proposed 90% reduction requirement for major utilities would result in some utilities required to report post-control compliance of mercury emissions in the range of 10 to 20 pounds, it really appears that the Department intends to count mercury in 1 pound increments. The same standard should apply to certification of process. We believe the Department should certify mercury emission reductions from pollution reduction projects at the 1.0 pound level.

G. Compliance alternatives and reporting requirements - NR 446.10

The Department has proposed that a major utility may only use certified emission reduction credits from a mercury-containing products reduction project to provide no more than 25% of the reductions required under proposed s. NR 446.06. Additionally, the Department has proposed that a major utility may only use certified emission reduction credits from a pollution reduction project performed by another person to provide no more than 25% of the reductions required under proposed s. NR 446.06. We strongly object to the Department's proposal to place these limits on these forms of emission reduction compliance alternatives. A pound of mercury reduced from any air emission source, or pound of mercury from any product which is collected and properly disposed of, should be valued on an equivalent basis for the purpose of satisfying any reduction requirement in mercury air emissions from a major utility. The Department must revise its rule proposal accordingly.

H. Annual mercury emissions determination - NR 446.11

The Department has proposed that major utilities determine and report the annual mercury emissions using a mass balance of mercury in all fuel used and by-products. We are opposed to this proposal for determining compliance. One finding from the EPA's Mercury ICR is that a mass balance method that includes sampling and analysis of all by-products simply doesn't work when applied to the coal-fired boiler combustion process. The ICR data shows that this mass balance method resulted in some sources reporting more mercury coming out of the process than what was measured in the coal going in. A compliance demonstration method that cannot consistently be applied and produce accurate results surely can not acceptable.

We detailed our thoughts on a much simpler and effective way of determining compliance in our comments on NR 446.04 in Section III. B. above. We summarize those comments again below.

We urge the WDNR to accept our proposal that a mercury emission baseline be established as a "current year," or "coal mercury in," baseline. The "current year" baseline would use current mercury in the coal ("coal mercury in") as the baseline from which any reduction requirement would be based. Fuel sample and analysis to determine mercury input to the combustion unit can be conducted at some reasonable frequency that will adequately satisfy expectations for accuracy for baseline determination. Biennial performance testing, the procedure the Department uses now for particulate control equipment, to quantify the mercury removal efficiency of pollution control equipment can be conducted and utilized to establish an emission factor which can be used in the reporting of outlet mercury emissions ("flue gas mercury out.") The "coal mercury in/flue gas mercury out" procedure would use current information developed with state-of-the-art methods to produce data of known accuracy.

Collecting the type of information for a mass balance determination that includes sampling and analysis of all by-products, as the Department has proposed, is a very poor use of staff time at our generating facilities. Even of greater consequence is the potential for compliance reports to be meaningless, e.g., as in the ICR study example where mass balance testing (including by-products) resulted in the reporting of more mercury emitted than what was measured in the coal going in to the boiler. How would the WDNR judge the regulated source to be in compliance if this were to be the case?

We strongly urge the Department to accept our proposal for a methodology that is far simpler to implement and which will produce compliance measurement that is as accurate as it need be.

Should you have any comments or questions regarding these comments on proposed AM-27-01, please contact Harold Frank of our staff at (608) 787-1295.

We anticipate filing additional supplemental comments by October 30, 2001.

Respectfully submitted,

DAIRYLAND POWER COOPERATIVE

Eric Hennen
Director, Environmental Affairs

ERH:krm

Attachment

cc: Tom Karman, WDNR Air Management Bureau

F:\GNR\GNRADMIN\letters2001\erh101501.doc